

Application No. 10/824,719
Technology Center 1745
Amendment dated October 1, 2007
Reply to Office Action dated May 29, 2007

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Amendments to the Specification:

Please replace the paragraph beginning at line 12 of page 11 with the following amended paragraph:

It should further be particularly noted that the structures required for the Joule heating and electric field generation may also be integrated into silicon wafer 152 of hydrogen storage member 150 through the use of conventional processes and structures for forming integrated circuits on silicon wafers. For example, Joule heating may be accomplished by passing an electrical current through one or more electrodes or traces 184 fabricated upon silicon wafer 152 so that heat is passed through either portion 152a or portion 152b, to affect desorption. ~~disorption~~ Electric field creation can be accomplished by fabricating spaced-apart electrodes or traces 186 upon silicon wafer 152 of hydrogen storage member 150, and applying a potential or voltage difference between the electrodes to thereby create an electric field, to affect desorption. ~~disorption~~

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Please replace the paragraph beginning at line 3 of page 13 with the following amended paragraph:

Porous silicon strikes a favorable balance between having a high surface area and maintaining an open matrix that allows hydrogen gas to diffuse into and out of the matrix. Once the porous silicon has been formed, additional steps can be used to further increase the surface area thereof still further. For example, ~~following-~~ the porosity etch can be followed with an anisotropic silicon etchant, such as, for example, potassium hydroxide or hydrazine, to expose ~~exposes-~~ crystal planes on the silicon nanocrystals. These crystal planes have a high density of dangling bonds, which readily accept termination by an element of hydrogen. Another method by which the surface area of porous silicon can be increased is to roughen the interior surfaces thereof. This can be done through dendritic growth or through etching.